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CHAUVIN®  
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# D38N



Measure up



# ENGLISH

Thank you for purchasing a **D38N current clamp**.

For best results from your instrument:

- **read** this manual carefully,
- **comply with** the precautions for use.



WARNING, DANGER! The operator should refer to this user's manual whenever this danger symbol appears.



Equipment protected by double insulation.



Application or withdrawal authorized on bare conductors carrying dangerous voltages. Type A current sensor as per IEC 61010-2-032.



Useful information or tip.



Direction of current.



Alternating current



The CE marking indicates conformity with European directives, in particular LVD and EMC.



The rubbish bin with a line through it indicates that, in the European Union, the product must undergo selective disposal in compliance with Directive WEEE 2002/96/EC. This equipment must not be treated as household waste.

## Definitions of the measurement categories

- Measurement category IV corresponds to measurements taken at the source of low-voltage installations. Example: power feeders, meters and protection devices.
- Measurement category III corresponds to measurements on building installations. Example: distribution panel, circuit-breakers, machines or fixed industrial devices.
- Measurement category II corresponds to measurements taken on circuits directly connected to low-voltage installations. Example: power supply to domestic electrical appliances and portable tools.

# PRECAUTIONS FOR USE

This device is compliant with safety standard IEC 61010-2-032, for voltages up to 600 V in category III or 300 V in category IV.

Failure to observe the safety instructions may result in electric shock, fire, explosion, or destruction of the instrument and of the installations.

- The operator and/or the responsible authority must carefully read and clearly understand the various precautions to be taken in use. Sound knowledge and a keen awareness of electrical hazards are essential when using this instrument.
- If you use this instrument other than as specified, the protection it provides may be compromised, thereby endangering you.
- Do not use the instrument on networks of which the voltage or category exceeds those mentioned.
- Do not use the instrument above the frequency indicated.
- Do not use the instrument if it seems to be damaged, incomplete, or poorly closed.
- Before each use, check the condition of the insulation on the leads, housing, and accessories. Any item of which the insulation is deteriorated (even partially) must be set aside for repair or scrapping.
- When applying or withdrawing the sensor on uninsulated conductors carrying a dangerous current, suitable safety equipment must be used.
- If it is not possible to power down the installation, adopt safe operating procedures and use suitable protective equipment.
- Keep your fingers behind the physical guard.
- The clamp must always be connected to a measuring instrument before clamping a conductor.
- Withdraw the clamp from the conductor before changing the range.
- Do not leave the clamp in places which are humid or exposed to running water.
- All troubleshooting and metrological checks must be performed by competent and accredited personnel.

## CONTENTS

<b>1. PRESENTATION</b> .....	<b>14</b>	3.9. Compliance with international standards.....	20
1.1 Delivery condition .....	14	3.10. Electromagnetic compatibility (EMC) .....	20
1.2. General information .....	14	<b>4. MAINTENANCE</b> .....	<b>21</b>
1.3. Front view .....	15	4.1. Cleaning .....	21
<b>2. OPERATION</b> .....	<b>16</b>	<b>5. WARRANTY</b> .....	<b>21</b>
<b>3. SPECIFICATIONS</b> .....	<b>17</b>		
3.1. Conditions of reference .....	17		
3.2. D38N clamp .....	18		
3.3. Sine peak current in permanent operation as a function of the frequency.....	19		
3.4. Environmental conditions .....	19		
3.5. Construction specifications .....	20		

# 1. PRESENTATION

## 1.1 DELIVERY CONDITION

Each D clamp is delivered in a cardboard box with a user's manual and a verification certificate.

For the accessories and spares, consult our web site:

[www.chauvin-arnoux.com](http://www.chauvin-arnoux.com)

## 1.2. GENERAL INFORMATION

The D current clamps are designed to measure alternating currents without opening the circuits or powering down the installation.

The shape of the D clamps makes it easy to enclose busbars carrying the current to be measured.

With a maximum jaw opening of 90 mm, the clamp can be used on cables up to 64 mm in diameter or on various types of busbars: 5 busbars of 125 mm x 5 mm or 3 busbars of 100 mm x 10 mm, with the spacing between the busbars equal to their thickness.

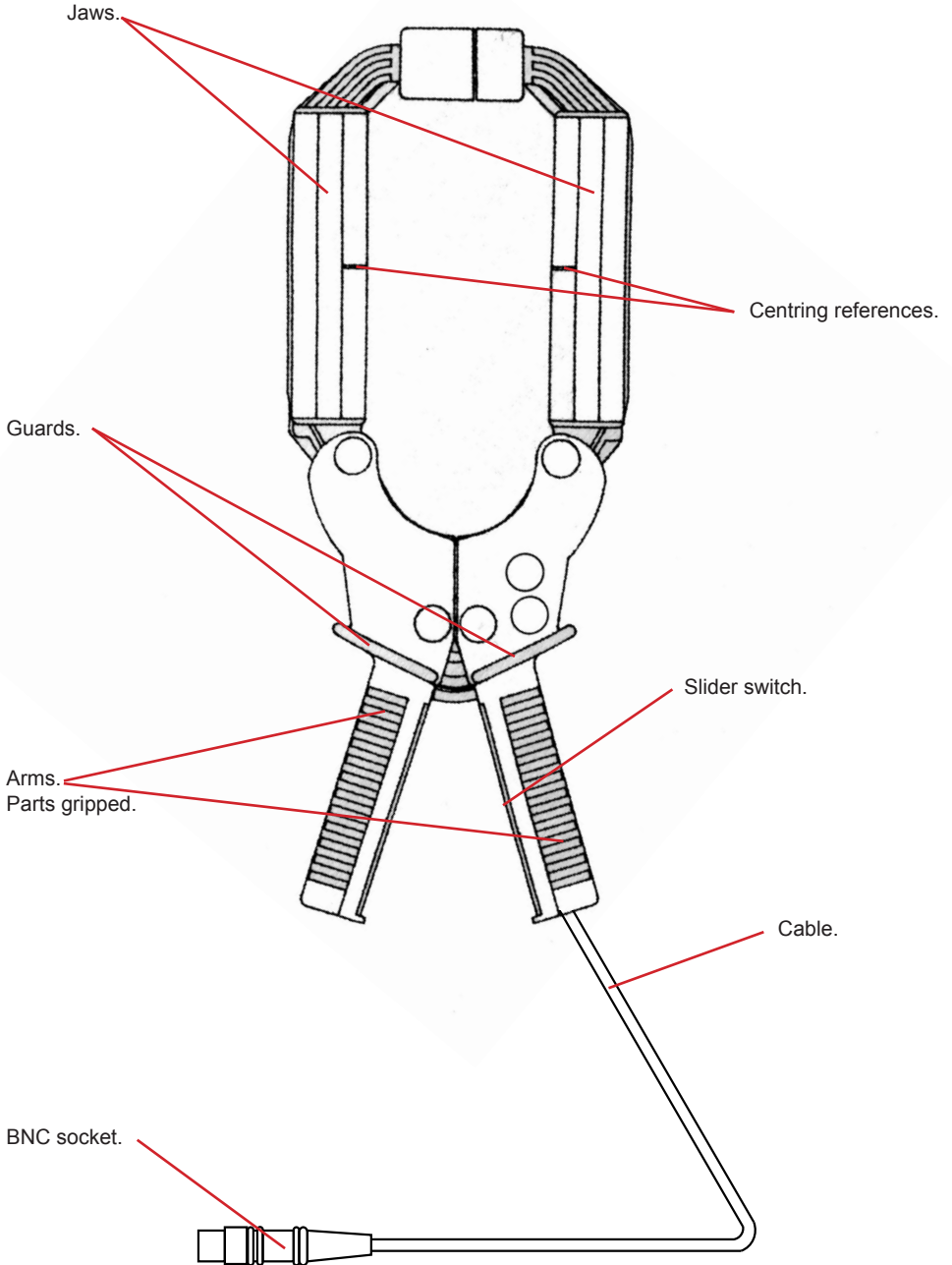
The D38N clamp is intended for measuring alternating currents and displaying them on an oscilloscope.

Clamp	Output	Range (A <sub>AC</sub> )
D38N	0.3 V <sub>AC</sub>	30 - 300 - 3,000

This clamp can withstand a 20% overload on all the ranges and for 10 minutes on the 3,000 A<sub>AC</sub> range.

Output is via a coaxial cable terminated by a BNC socket.

### 1.3. FRONT VIEW



## 2. OPERATION

- Set the switch to the highest range.
- Connect the clamp to the measuring instrument.



If it is not possible to power down the installation, the clamp must be set up and withdrawn in strict compliance with the applicable safety instructions.



The clamp must always be connected to a measuring instrument before enclosing a conductor.

- Open the clamp's jaws by bringing the arms closer together. Enclose the conductor(s) carrying the current to be measured. Close the jaws by lightly clicking them together.



For optimum measurement quality, centre the conductor as precisely as possible in the middle of the jaws. Make sure the conductor is perpendicular to the jaws.



As far as possible, keep away from other conductors which could generate spurious fields.

- Read the measurement on the instrument and apply the reading coefficient to the measurement in  $V_{AC}$ .

Clamp	Coefficient		
D38N	30 A <sub>AC</sub> range	10 mV / A	x 10
	300 A <sub>AC</sub> range	1 mV / A	x 1
	3,000 A <sub>AC</sub> range	0.1 mV / A	x 0.1

If necessary, withdraw the clamp from the conductor, change the range and then reposition on the conductor.

- When you have finished measuring, remove the clamp from the conductor and then disconnect the oscilloscope.

## 3. SPECIFICATIONS

### 3.1. CONDITIONS OF REFERENCE

Influencing quantity	Reference value
Temperature	23 ± 3 °C
Relative humidity	0 to 85 % RH
Frequency of signal measured	48 to 65 Hz
Type of signal	sinusoidal without DC component
Adjacent current-carrying conductor	none
Conductor position in jaws	centred
External electric field	none
External DC magnetic field (terrestrial magnetic field)	< 40 A/m
External AC magnetic field	none
Input impedance of measuring instrument	1 MΩ, 47 pF

The intrinsic uncertainty is the error defined in the conditions of reference.

Uncertainties are expressed as a percentage of the reading (%R) on the measuring instrument.



The uncertainties indicated are those of the clamps. To find out the total uncertainty, you must add on the uncertainty of the measuring instrument.

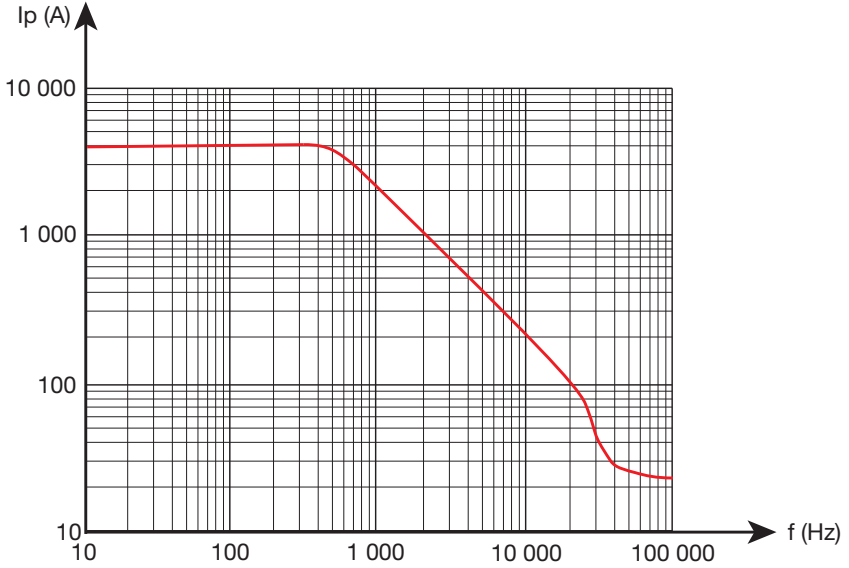
### 3.2. D38N CLAMP

Clamp		D38N	
Range	30 A <sub>AC</sub>	300 A <sub>AC</sub>	3,000 A <sub>AC</sub>
Measurement range	1 to 90 A <sub>peak</sub>	1 to 900 A <sub>peak</sub>	1 to 9,000 A <sub>peak</sub>
Intrinsic uncertainty	2 %R + 1 mV	2 %R + 0,5 mV	2 %R + 0,2 mV
Phase shift	20° for 1,5 A 10° for 6 A 5° for 30 A 5° for 36 A	3° for 15 A 1,5° for 60 A 1° for 300 A 1° for 360 A	3° for 150 A 1,5° for 600 A 1° for 3 000 A 1° for 3 600A
Max peak current	90 A	900 A	9,000 A
Influence of temperature	< 0.2% / 10 °C		
Influence of an adjacent current-carrying conductor	0.005 A / A <sub>AC</sub>		
Influence of conductor position	1 % + 0.1 A		
Influence of frequency (see the curve of frequency limitation as a function of the current)	1 dB (from 10 Hz to 10 kHz)	1 dB (from 10 Hz to 10 kHz)	1 dB (from 10 Hz to 10 kHz)
Duration of use	permanent	permanent	from 1 to 2,400 A permanent from 2,400 to 2,800 A 10 min - 30 min off from 2,800 to 4,000 A 5 min - 30 min off

Bandwidth: 10 Hz to 50 kHz (-3 dB)

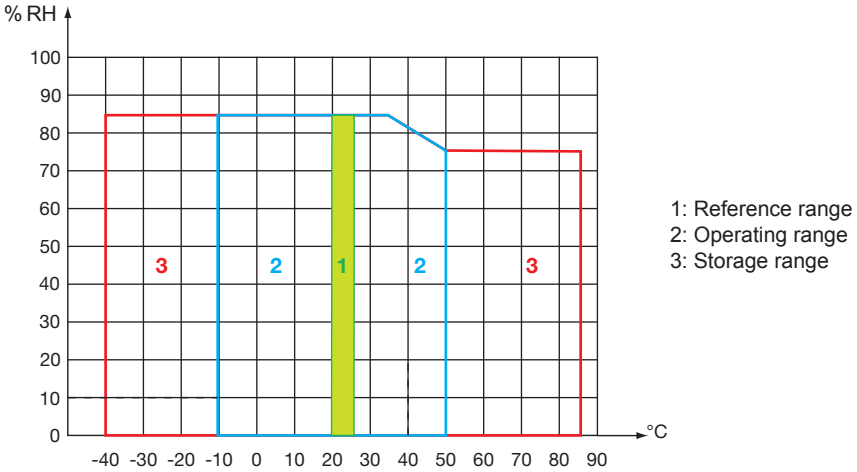


### 3.3. SINE PEAK CURRENT IN PERMANENT OPERATION AS A FUNCTION OF THE FREQUENCY



### 3.4. ENVIRONMENTAL CONDITIONS

The instrument must be used in the following conditions:



Indoor use.  
 Degree of pollution: 2.  
 Altitude: < 2,000 m.

### 3.5. CONSTRUCTION SPECIFICATIONS

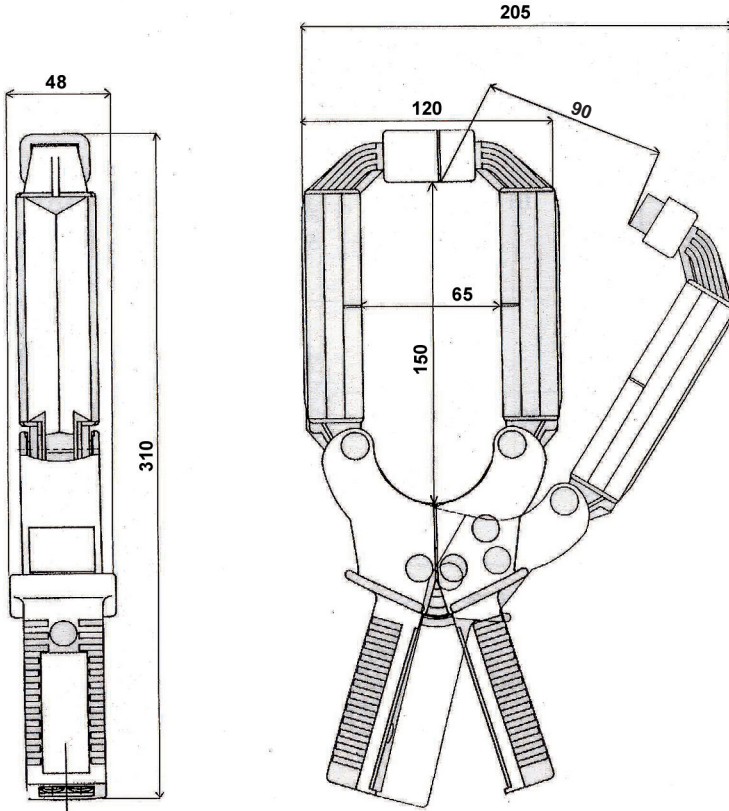
Dimensions: 310 x 120 x 48 mm

Opening: approx. 90 mm

Ø 4 mm cable 2 m long terminated by a BNC socket.

Weight: approx. 1,200 g.

Protection rating: IP 20 as per IEC 60529



### 3.9. COMPLIANCE WITH INTERNATIONAL STANDARDS

The instrument complies with the IEC 61010-2-032 standard for type-A sensors.

Double insulation.

### 3.10. ELECTROMAGNETIC COMPATIBILITY (EMC)

Emission and immunity in industrial environments as per IEC 61326-1.

## 4. MAINTENANCE

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The instrument contains no parts that can be replaced by personnel who have not been specially trained and accredited. Any unauthorized repair or replacement of a part by an “equivalent” may seriously impair safety.

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### 4.1. CLEANING

Disconnect the instrument completely.

Use a soft cloth, dampened with soapy water. Rinse with a damp cloth and dry rapidly with a dry cloth or forced air. Do not use alcohol, solvents or hydrocarbons.

Make sure that the jaw faces are kept clean. If necessary, clean them with a soft, slightly-oiled cloth to avoid oxidization.

## 5. WARRANTY

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Except as otherwise stated, our warranty is valid for **twelve months** starting from the date on which the equipment was sold. Extract from our General Conditions of Sale provided on request.

The warranty does not apply in the following cases:

- Inappropriate use of the equipment or use with incompatible equipment;
- Modifications made to the equipment without the explicit permission of the manufacturer's technical staff;
- Work done on the device by a person not approved by the manufacturer;
- Adaptation for a particular application not anticipated in the definition of the equipment or not indicated in the user's manual;
- Damage caused by shocks, falls, or floods.